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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 11

Complete if Known

Application Number	09/752,731
Filing Date	01/03/01
First Named Inventor	Lawrence Loomis
Group Art Unit	1616
Examiner Name	Dameron Levest Jones
Attorney Docket Number	

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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
RJ	1	US- 8058954	05/02/00	Fischetti, et al.	
	2	US- 5997862	12/07/99	Fischetti, et al.	
	3	US- 5985271	11/16/99	Fischetti, et al.	
	4	US- 5688501	11/18/97	Merril, et al.	
	5	US- 4742981	05/10/88	Converse	
	6	US- 2019789	11/05/35	Mahannah	
	7	US- 2763931	08/25/56	McMillan	
	8	US- 5479732	01/02/96	Burch, et al.	
	9	US- 3465445	09/09/69	Fisher	
	10	US- 2315260	03/30/43	Lancaster	
	11	US- 5604109	02/18/97	Fischetti, et al.	
	12	US- 5280292	11/09/93	Robinson, et al.	
	13	US- 4957686	09/18/90	Norris	
	14	US- 6017528	01/25/00	Fischetti, et al.	
	15	US- 6132970	10/17/00	Stemmer	
V	16	US- 3852424	12/03/74	Gaeumann, et al.	
	17	US- 6264945	07/24/01	Fischetti, et al.	
	18	US- 6254868	07/03/01	Fischetti, et al.	
	19	US- 6248324	08/19/01	Fischetti, et al.	
	20	US- 6238661	05/29/01	Fischetti, et al.	

FOREIGN PATENT DOCUMENTS

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		Country Code ⁴ - Number ⁴ - Kind Code ⁵ (if known)				
RJ	21	EP-0510907 A 2	10/28/92	Agricultural & Food Res.		
	22	WO-9702351	01/23/97	CIBA Geigy AG, et al.		
	23	WO-9607329	03/14/96	Univ. Maryland		
	24	WO-9904809	02/04/99	Ambi, Inc.		
	25	FR-2357246	02/03/78	Martinez		
V	26	WO-9531562	11/23/95	Quest International B.V.		
	27	EP-587541 A1	03/16/94	Tecnogen ScpA		

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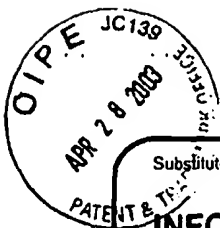
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Sheet 2 of 11

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First Named Inventor	Lawrence Loomis
Group Art Unit	1616
Examiner Name	Dameron Levest Jones
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RJ	28	US- 6056955	05/02/00	Fischetti, et al.	
	29	US- 5882631	03/16/99	Suga, et al.	
	30	US- 5741487	04/21/98	Asai, et al.	
	31	US- 6113887	09/05/00	Mori, et al.	
	32	US- 4122158	10/24/78	Schmitt	
	33	US- 3983209	09/28/76	Schmitt	
	34	US- 4885163	12/05/89	Shaar, et al.	
	35	US- 6177554	01/23/01	Woo, et al.	
	36	US- 6187757	02/13/01	Clackson, et al.	
	37	US- 5162226	11/10/92	Beachey, et al.	
RJ	38	US- 6335012	01/01/02	Fischetti, et al.	
	39	US- 6326002	12/04/01	Fischetti, et al.	
	40	US- 6277399	08/21/01	Fischetti, et al.	
	41	US- 4062941	12/13/77	Davies	
	42	US- 5571667	11/05/96	Chu, et al.	
	43	US- 5514602	05/07/96	Brooks Jr, et al.	
	44	US- 5500350	03/19/96	Baker, et al.	
	45	US- 5384265	01/24/95	Kidwell, et al.	
	46	US- 4361537	11/30/82	Deutsch, et al.	
	47	US- 5120843	06/09/92	Ching, et al.	

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RJ	48	WO-9323544	11/25/93	The University Court of the University of Glasgow		
	49	EP-0293249 A1	11/30/88	Amrad Corporation Limited		
RJ	50	EP-0646646 A2	04/05/95	Bristol-Myers Squibb Company		
	51	EP-0359873 A1	03/28/90	The Public Health Research Inst. of the City of New York		

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Examiner Name	Dameron Levest Jones
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B V P 9	72	US- 5604110	02/18/97	Baker, et al.	
	73	US- 5294369	03/15/94	Shigekawa, et al.	
	74	US- 5372931	12/13/94	Friedman, et al.	
	75	US- 4933185	06/12/90	Wheatley, et al.	
	76	US- 5108758	04/28/92	Alwood, et al.	
	77	US- 4713249	12/15/87	Schroder	
	78	US- 4812445	03/14/89	Eden, et al.	
	79	US- 3822677	11/23/71	Short, et al.	
	80	US- 4389308	01/18/83	Trubiano	
	81	US- 5393656	02/28/95	Olsen	
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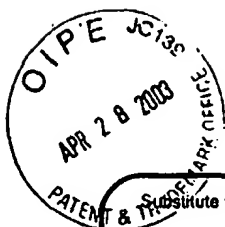
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	Group Art Unit	1616
	Examiner Name	Dameron Levest Jones
Sheet 6 of 11	Attorney Docket Number	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
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	84	BABENKO et al. Enzymatic lysis of staphylococci in relation to their species and strain properties, 1990, Database Medline Online, US National Library of Medicine, Bethesda, MD, US, Database Accession No. 90297672, XP002170795, abstract only	
	85	BARTELL, et al., Origin of polysaccharide depolymerase associated with bacteriophage infection, Journal of Virology, March 1969, pp. 290-296, Vol. 3, No. 3	
	86	BEHNKE, et al., Cloning and expression in Escherichia coli, Bacillus subtilis and Streptococcus sanguis of a gene for staphylokinase - a bacterial plasminogen activator, Mol Gen Genet, December 1987, pp. 528-534, Vol. 210	
	87	BESSEN, et al., Chemical characterization of binding properties of opacity-associated protein II from Neisseria gonorrhoeae, Infection and Immunity, January 1987, pp. 141-147, Vol. 55, No. 1	
	88	BIZIULEVICHUS, et al., In vivo studies on lysostaphin: 3. Efficacy for treatment of mastitis and superficial lesions of the udder and teats in cows, 1998, Database Biosis Online, Biosciences Information Service, Philadelphia, PA, US, Database Accession No. PREV199800492606, XP002183274, abstract only	
	89	BOIZET, et al., Cloning, expression and sequence analysis of an endolysin-encoding gene of Lactobacillus bulgaricus bacteriophage mv1, Gene, 2000, pp. 61-67, Vol. 94	
	90	CALDWELL, et al., Purification and partial characterization of the major outer membrane protein of Chlamydia trachomatis, Infection and Immunity, March 1981, pp. 1161-1176, Vol. 31, No. 3	
	91	YOUNG et al. Phages will out: strategies of host cell lysis, Trends in Microbiology, Volume 8 No. 3, March 2000, pp 120-127	
	92	CORBET, et al., Soluble antigens obtained from influenza virus by treatment with non-ionic detergent, J Hyg., Camb., 1970, pp. 81-96, Vol. 68	
	93	CROUX, et al., Interchange of functional domains switches enzymes specificity: construction of a chimeric pneumococcal-diffridial cell wall lytic enzyme, Molecular Microbiology, 1993, pp.1019-25, Vol. 9, No. 5	
	94	DIAZ, et al., Chimeric phage-bacterial enzymes: a clue to the modular evolution of genes, Proc. Natl. Acad. Sci. USA, October 1990, pp. 8125-8129, Vol. 87	

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		Group Art Unit	1616		
		Examiner Name	Dameron Levest Jones		
Sheet	7	of	11	Attorney Docket Number	

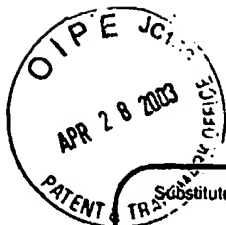
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	95	DIAZ, et al., Chimeric pneumococcal cell wall lytic enzymes reveal important physiological and evolutionary traits, Journal of Biological Chemistry, March 25, 1991, pp. 5484-5471, Vol. 268, No. 9	
	96	DIXON, et al., Lysostaphin: an enzymatic approach to staphylococcal disease. III. Combined lysostaphin-methicillin therapy of established staphylococcal abscesses in mice, The Yale Journal of Biology and Medicine, August 1988, pp. 62-68, Vol. 41, No. 1	
	97	FISCHETTI, et al., Size variation of the M protein in group A streptococci, Journal of Exp. Med., June 1, 1985, pp. 1384-1401, Vol. 161, No. 6	
	98	GARCIA, et al., Bacteriophages of Streptococcus pneumoniae: A molecular approach, Microbial Drug Resistance, Summer 1997, pp. 165-176, Vol. 3, No. 2	
	99	GARCIA, et al., Cloning, purification and biochemical characterization of the pneumococcal bacteriophage Cp-1 lysin, Journal of Virology, August 1987, pp. 2573-2580, Vol. 61, No. 8	
	100	GARCIA, et al., Modular organization of the lytic enzymes of streptococcus pneumoniae and its bacteriophages, Gene, 1990, pp. 81-88, Vol. 86	
	101	GERARDY-SCHANN, et al., Molecular cloning and functional expression of bacteriophage PK1E-encoded endoneuraminidase End6 NE, Molecular Microbiology, May 1995, pp. 441-450, Vol. 18, No. 3	
	102	GOLDBERG, et al., Studies in experimental staphylococcal endocarditis in dogs, Antimicrobial Agents and Chemotherapy, 1987, pp. 45-53	
	103	HARRISON, et al., Lysostaphin in experimental renal infections, Journal of Bacteriology, February 1967, pp. 520-524, Vol. 93, No. 2	
	104	HARRISON, et al., Therapeutic activity of lysostaphin in experimental staphylococcal infections, Canadian Journal of Microbiology, January 1987, pp. 93-97, Vol. 13, No. 1	
	105	HAYASHI, et al., Effects of N-Acetylmuramidase from Streptomyces rutgersensis H-48 as a food preservative, Agric. Biol. Chem., December 1989, pp. 3173-3177, Vol. 53, No. 12	

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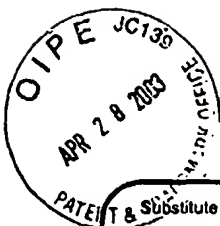
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	106	HAYASHIDA, et al., Further characterization of PL-1 phage associated N-acetylmuramidase of Lactobacillus casei, Journal of General Microbiology, May 1987, pp. 1343-1349, Vol. 133, No. 5	
	107	HIGUCHI, et al., Transfection of streptococcus sanguis by phage deoxyribonucleic acid isolated from streptococcus mutans, Infection and Immunity, March 1977, pp. 945-949, Vol. 15, part 3	
	108	HUAN, et al., Methicillin-resistant staphylococcus aureus infection and its treatment in burned patients, Chinese Journal of Surgery, 1994, Vol. 32, No. 4, abstract	
	109	HUGHEY, et al., Antimicrobial activity of lysozyme against bacteria involved in food spoilage and food-borne disease, Applied and Environmental Microbiology, September 1987, pp. 2165-2170, Vol. 53, No. 9	
	110	KOHLER, Systemic therapy with aerosols Aerosols in Medicine: Principles, Diagnosis and Therapy, 1993, Elsevier Science Publishers, pp. 303-319	
	111	LAWMAN, et al., Molecular cloning of the extracellular endodextranase of streptococcus salivarius, Journal of Bacteriology, December 1991, pp. 7423-7428, Vol. 173, No. 23	
	112	LOESSNER, et al., Evidence for a holin-like protein gene fully embedded out of frame in the endolysin gene of staphylococcus aureus bacteriophage 187, Journal of Bacteriology, August 1999, pp. 4452-4460, Vol. 181, No. 15	
	113	LOESSNER, et al., Modified listeria bacteriophage lysis genes (ply) allow efficient overexpression and one - step purification of biochemically active fusion proteins, Applied and Environmental Microbiology, August 1996, pp. 3057-3060, Vol. 62, No. 8	
	114	LOPEZ, et al., Architecture and domain interchange of the pneumococcal cell wall lytic enzymes, Genetics of Streptococci, Enterococci and Lactococci, Developments in Biological Standardization, 1995, pp. 273-281, Vol. 85	
	115	LOPEZ, et al., The pneumococcal cell wall degrading enzymes a modular design to create new lysins, Microbial Drug Resistance, November 2, 1997, pp. 199-211, Vol. 3, No. 2	
	116	MARTIN, et al., Functional analysis of the two-gene lysis system of the pneumococcal phage Cp-1 in homologous and heterologous host cells, Journal of Bacteriology, January 1998, pp. 210-217, Vol. 180, No. 2	

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Sheet	9	of	11	Attorney Docket Number	

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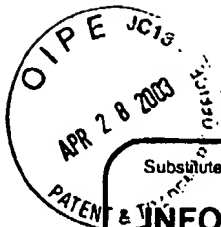
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	117	MUKHLIS, et al., Characterization and Immunogenicity of HSV-1 antigens obtained following zwitterionic detergent treatment; Vaccine, September 1986, pp. 191-198, Vol. 4	
	118	NELSON, et al., Prevention and elimination of upper respiratory colonization of mice by group A streptococci by using a bacteriophage lytic enzyme, PNAS, March 27, 2001, pp. 4107-4112, Vol. 98, No. 7	
	119	NELSON, et al., Selective and rapid killing of group A streptococci using a muralytic enzyme, Database Biosis Online, Biosciences Information Service, Philadelphia, PA, US and abstracts of the General Meeting of the American Society for Microbiology, 2000, pp. 32-33	
	120	OKI, et al., Functional and structural features of the holin HOL protein of the Lactobacillus plantarum phage analysis in escherichia coli system, Gene, 1997, pp. 137-145, Vol. 197	
	121	OKUHARA, et al., Preparation of group A streptococcal cell membranes by treatment with group C streptococcus phage - associated lysin, Annales Paediatrici Japonici, June 1983, pp. 10-19, Vol. 29, No. 2	
	122	PATTON, et al., Routes of delivery: case studies, Pulmonary delivery of peptides and proteins for systemic action, Advanced Drug Delivery Reviews, 1992, pp. 179-196, Vol. 8	
	123	POLAK, et al., In vitro activity of recombinant lysostaphin-antibiotic combinations toward methicillin-resistant staphylococcus aureus, Diagn. Microbiol. Infect. Dis., 1993, pp. 265-270, Vol. 17	
	124	RAINA, Purification of streptococcus group C bacteriophage lysin, Journal of Bacteriology, January 1981, pp. 661-663, Vol. 145, No. 1	
	125	RONDA, et al., Infection of streptococcus oralis NCTC 11427 by pneumococcal phages, FEMS Microbiology Letters, 1989, pp. 187-192, Vol. 65	
	126	SANZ, et al., Construction of a multifunctional pneumococcal murein hydrolase by module assembly, Eur. J. Biochem., February 1, 1996, pp. 601-605, Vol. 235, No. 3	
	127	SATO, et al., Partial characterization of n - Butanol - solubilized rejection - type antigens of syngeneic murine colon tumors, JNCI, April 1985, Vol. 74, No. 4	

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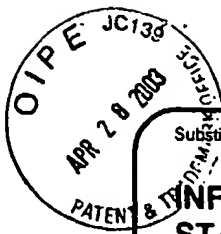
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	128	SHEEHAN, et al., Analysis of the catalytic domain of the lysis of the lactococcal bacteriophage Tuc2009 by chimeric gene assembling; FEMS Microbiology Letters, 1996, pp. 23-28, Vol. 140	
	129	SHEEHAN, et al., The lytic enzyme of the pneumococcal phage Dp-1: A chimeric lysis of intergeneric origin, Molecular Microbiology, 1997, pp. 717-725	
	130	WITTE, et al., Characterization of escherichia coli lysis using a family of chimeric E-L genes, FEMS Microbiology Letters, 1998, pp. 159-167, Vol. 164	
	131	YARNALL, et al., Isolation and partial characterization of a type II Fc receptor from a group A streptococcus, Molecular and Cellular Biochemistry, 1986, pp. 57-66, Vol. 70	
	132	CISANI, et al., High level potentiation of lysostaphin anti-staphylococcal activity by lysozyme, Antimicrobial Agents and Chemotherapy, April 1982, pp. 531-535, Vol.21, No. 4	

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Substitute for form 1449A/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/752,731		
		Filing Date	January 3, 2001		
		First Named Inventor	Lawrence Loomis		
		Group Art Unit	1616		
		Examiner Name	Jones, Dameron Levest		
Sheet	11	of	11	Attorney Docket Number	

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U.S. PATENT DOCUMENTS					
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		Number - Kind Code ² (if known)			
[Signature]	133	US-5605793	02/25/97	Stemmer	
	134	US- 6355477	03/12/02	Fischetti et al	
	135	US- 6331405	12/18/01	Rambukkana et al	
	136	US- 6190659	02/20/01	Pancholi et al	
	137	US- 5985654	11/16/99	Fischetti et al	
	138	US- 5842314	11/24/98	Scott et al	
	139	US- 5910441	06/08/99	Rocha et al	
	140	US- 5786205	07/28/98	Fischetti et al	
	141	US- 5976792	11/02/99	Cheung et al	
	142	US- 5821088	10/13/98	Darzens et al	
	143	US- 5723303	03/03/98	Fischetti et al	
	144	US- 5643767	07/01/97	Fischetti et al	
	145	US- 5707822	01/13/98	Fischetti et al	
	146	US- 5618686	04/01/97	Fischetti et al	
	147	US- 5604109	02/18/97	Fischetti et al	
	148	US- 5587288	12/24/96	Cheung et al	
	149	US- 5558944	09/17/96	Fischetti et al	
	150	US- 5352588	10/04/94	Fischetti et al	
[Signature]	151	US- 5968763	10/19/99	Fischetti et al	
	152	US- 4784948	11/15/88	Scott et al	

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Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
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


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				Application Number	09752,731
				Filing Date	1/3/01
				First Named Inventor	Loomis, Jr
				Group Art Unit	1616 Lu16
				Examiner Name	BAWA, R. Jones
Sheet	1	of	5	Attorney Docket Number	

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.†	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code‡ (if known)			
A		6,264,945		Fischetti et al.	07-24-2001	
		6,254,866		Fischetti et al.	07-03-2001	
		6,248,324		Fischetti et al.	06-19-2001	
		6,238,661		Fischetti et al.	05-29-2001	
		6,056,955		Fischetti et al.	05-02-2000	
		6,056,954		Fischetti et al.	05-02-2000	
		6,017,528		Fischetti et al.	01-25-2000	
		5,997,862		Fischetti et al.	12-07-1999	
		5,985,271		Fischetti et al.	11-06-1999	
		5,688,501		Merril et al.	11-18-1997	
		4,957,686		Norris	09-18-1990	
		5,604,109		Fischetti et al.	02-18-1997	
		5,882,631		Suga et al.	03-16-1999	
		5,741,487		Asai et al.	04-21-1998	
		6,113,887		Mori et al.	09-05-2000	
B		4,122,158		Schmitt	10-24-1978	
		3,983,209		Schmitt	09-28-1976	
		6,113,887		Mori et al.	09-05-2000	
		4,885,163		Shaar et al.	12-05-1989	

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Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	To
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
 			WO 97 02351 A		CIBA GEIGY AG, et al.	01-23-1997		
			WO 96 07329 A		UNIV. MARYLAND	03-14-1996		
			EP 0 510 907 A		AGRICULTURAL & FOOD RES	10-28-1992		
			WO 99 04809 A		AMBI INC	02-04-1999		

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Sheet **3** of **5**

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Application Number	
Filing Date	
First Named Inventor	
Group Art Unit	
Examiner Name	<i>RAWA Jones</i>
Attorney Docket Number	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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<i>[Signature]</i>		Reisenger, et al. (1998) "Characterization of Escherichia coli lysis using a family of chimeric E-L Genes" <i>Fems Microbiol Letter.</i> 164(1) p.159-167	
		Sheehan MM, et al. (1997) "The lytic enzyme of the Pneumococcal Phage Dp-1: a chimeric lysis of intergeneric origin." <i>Mol. Microbiol.</i> 25(4) p. 717-725	
		Young et al. (2000) "Phages will out: strategies of host cell lysis." <i>Trends in Microbiology.</i> 8(4) p. 120-127	
		Garcia et al.(1997) "The Pneumococcal cell wall degrading enzymes: A modular design to create new lysins?" <i>Microb. Drug Resist.</i> 3(2): p. 199-211	
		Sheehan MM, et al., (1997) "The Lytic Enzyme of the Pneumococcal Phage Dp-1: a Chimeric Lysin of Intergeneric Origin" <i>Mol. Microbiol.</i> 25(4) p. 717-25	
		Garcia P, et al. (1997) "Bacteriophages of Streptococcus pneumoniae: a molecular approach" <i>Microb. Drug Resist.</i> 3(20) 165-76.	
		Sheehan, MM, et al.(1996) "Analysis of the catalytic domain of the lysin of the lactococcal bacteriophage Tuc2009 by chimeric gene assembling." <i>FEMS Microbiol.Lett.</i> 14(1): p. 23-28.	
		Sanz, JM, et al. (1996) "Construction of a multifunctional pneumococcal murein hydrolase by module assembly." <i>Eur. J. Biochem.</i> 235(3):601-5	
<i>[Signature]</i>		Lopez R, et al. (1995) "Architecture and Domain Interchange of the Pneumococcal Cell Wall Lytic Enzymes" <i>Dev. Biol. Stand.</i> 85 p. 273-81.	

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[Signature]

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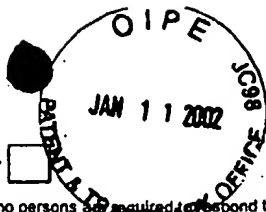
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	
		Filing Date	
		First Named Inventor	
		Group Art Unit	1619/1610
		Examiner Name	Bawa Jones
Sheet 4 of 5	Attorney Docket Number		

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
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DS		Croux, et al.(1993) "Interchange of Functional Domains Switches Enzymes Specificity: Construction of a chimeric pneumococcal-clostridial cell wall lytic enzyme." <i>Mol. Microbiology</i> . 9(5) p. 1019-25.	
		Diaz, E. et al. (1990) "Chimeric phage-bacterial enzymes: a clue to the modular evolution of genes. <i>PNAS</i> . 87(20) p. 8125-9.	
		Diaz, E. et al.(1990) "Chimeric pneumococcal cell wall lytic enzymes reveal important physiological and evolutionary traits." <i>J. Biol. Chem.</i> 266(9) p. 5464-71.	
		Lopez, et al. (1997) "The pneumococcal cell wall degrading enzymes: A modular design to create new lysins?" <i>Microbiological Drug Resistance</i> , 3(2) p. 199-211.	
		Loessner, et al. (1999) "Evidence for a holin-like protein gene fully embedded out of frame in the endolysin gene of <i>Staphylococcus aureus</i> Bacteriophage." (1999) <i>Journal of Bacteriology</i> , 181(15) p. 4452-4460.	
		Witte, A et al. (1998) "Characterization of <i>Escherichia coli</i> lysis using a family of chimeric E-L genes." <i>FEMS Microbiol. Lett.</i> , 164(1), p. 159-167	
		Martin, Ana C et al (1998): "Functional analysis of the two-gene lysis system of the pneumococcal phage Cp-1 in homologous and heterologous host cells." <i>Journal of Microbiology</i> 180(2), p. 210-217	
		Oki Masaya et al. (1997) "Functional and structural features of the holin HOL protein of the <i>Lactobacillus plantarum</i> phage phi-gle: Analysis in <i>Escherichia coli</i> system." <i>Gene (AMSTERDAM)</i> 197(1-2) p 137-145.	

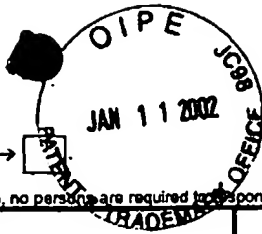
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		Filing Date	
		First Named Inventor	
		Group Art Unit	1619 / 1618
		Examiner Name	BAWA Jones
Sheet 5 of 5	Attorney Docket Number		

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		Young, Ry et al. (2000) "Phages will out: strategies of host cell lysis." <i>Trends in Microbiology</i> , 8(3) p 120-127.	
		Nelson, et al. (2001) "Prevention and elimination of upper respiratory colonization of mice by Group A Streptococci by using a bacteriophage lytic enzyme." <i>PNAS</i> . 98 (7) p. 4107-4112	
		Garcia, et al. (1987) "Purification and biochemical characterization of the pneumococcal bacteriophage Cp-1 lysin." <i>Journal of Virology</i> 61(8) p. 2573 - 2580.	
		Loessner, et al. (1996) "Modified Listeria bacteriophage lysin genes (ply) allow efficient overexpression and one-step purification of biochemically active fusion proteins." <i>Applied and Environmental Microbiology</i> . 62(8) p. 3057-3060	

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